AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of Claims:

Claim 1 (Currently amended): An isolated, synthetic, or recombinant nucleic acid comprising:

(a) a nucleic acid sequence having at least 95% sequence identity to SEQ ID NO:23, ~~over a region of at least 1650 residues,~~ wherein the nucleic acid encodes a polypeptide having a laccase activity, or

(b) a nucleic acid sequence completely complementary to (a).

Claim 2 (Currently amended): An isolated, synthetic, or recombinant nucleic acid comprising a nucleic acid sequence having at least 97% sequence identity to SEQ ID NO.:23, ~~over a region of at least 1650 residues,~~ wherein the nucleic acid encodes a polypeptide having a laccase activity.

Claim 3 (Previously presented): An isolated, synthetic, or recombinant nucleic acid comprising a nucleic acid sequence having at least 99% sequence identity to SEQ ID No.:23, ~~over a region of at least 1650 residues,~~ wherein the nucleic acid encodes a polypeptide having a laccase activity.

Claim 4 (Canceled)

Claim 5 (Previously presented): An isolated, synthetic, or recombinant nucleic acid comprising the sequence of SEQ ID NO:23.

Claim 6 (Currently amended): The isolated, synthetic, or recombinant nucleic acid as in any of [[of]] the preceding claims ~~1 through 5~~, wherein the nucleic acid ~~comprises a sequence that~~

encodes at least 550 contiguous amino acids of a polypeptide having laccase activity comprising the amino acid sequence of SEQ ID NO:24.

Claims 7 - 9 (canceled)

Claim 10 (Currently amended): The isolated, synthetic or recombinant nucleic acid of claim 1, wherein the encoded polypeptide having laccase activity comprises catalyzing the oxidation of 2,2'-azino-bis(3-ethylbenzthiazoline-6-sulfonic acid) (ABTS).

Claim 11 (currently amended): The isolated, synthetic or recombinant nucleic acid of claim 1, wherein the encoded polypeptide having laccase activity comprises a peroxidase activity.

Claim 12 (canceled)

Claim 13 (currently amended): The isolated, synthetic or recombinant nucleic acid of claim 1, wherein the encoded polypeptide having laccase activity comprises oxidation of valencene.

Claim 14-20 (canceled)

Claim 21 (currently amended): The isolated, synthetic or recombinant nucleic acid of claim 1, wherein the encoded polypeptide having laccase activity comprises oxidation of an aromatic amine.

Claim 22 (Currently amended): The isolated, synthetic or recombinant nucleic acid of claim 1, wherein the encoded polypeptide having laccase activity retains [[a]] the laccase activity after exposure to a temperature range of 55°C to 75°C.

Claim 23 - 26 (canceled)

Claim 27 (currently amended): A nucleic acid probe for identifying a nucleic acid encoding a

polypeptide with a laccase activity, wherein the probe comprises ~~comprising~~ at least 60 to 150 consecutive bases of [[a]]the nucleic acid ~~sequence having at least 95% sequence identity to a subsequence of SEQ ID NO:23,~~ of claim 1, wherein the probe identifies the nucleic acid by ~~binding or~~ hybridization under high stringency conditions, wherein the high stringency conditions include a wash step comprising a wash in 0.2X SSC at a temperature of about 65°C for about 15 minutes, and the identified nucleic acid sequence has at least 95% sequence identity to SEQ ID NO:23, and the identified nucleic acid encodes a polypeptide having laccase activity.

Claims 28 to 39 (canceled)

Claim 40 (previously presented): An expression cassette comprising the nucleic acid of claim 1.

Claim 41 (previously presented): A vector comprising the nucleic acid of claim 1.

Claim 42 (previously presented): A cloning vehicle comprising the nucleic acid of claim 1.

Claims 43 to 44 (canceled)

Claim 45 (previously presented): An isolated transformed cell comprising the nucleic acid of claim 1.

Claim 46 (canceled)

Claim 47 (previously presented): The isolated transformed cell of claim 45, wherein the cell is a yeast cell.

Claims 48-105 (canceled)

Claim 106 (currently amended): A method for producing a recombinant polypeptide having [[a]] laccase activity, comprising ~~the steps of~~:

(a) transforming a host cell with a nucleic acid operably linked to a promoter, wherein the nucleic acid comprises the sequence of claim 1; and

(b) expressing the nucleic acid of ~~step~~ (a) under conditions that allow expression of the polypeptide, thereby producing the recombinant polypeptide.

Claims 107-127 (canceled)

Claim 128 (currently amended): A method for isolating or recovering a nucleic acid encoding a polypeptide with [[a]] laccase activity from an environmental ~~samples~~ sample comprising ~~the steps of~~:

(a) providing the probe of claim 27;

(b) isolating a nucleic acid from the environmental sample or treating the environmental sample so that the nucleic acid is accessible for hybridization to the probe;

(c) combining the isolated nucleic acid or the treated environmental sample of ~~step~~ (b) with the probe; and

(d) isolating a nucleic acid that specifically hybridizes with the probe; thereby isolating or recovering a nucleic acid encoding a polypeptide with [[a]] laccase activity from an environmental sample.

Claims 129-150 (canceled)

Claim 151 (currently amended): A method for oxidizing an aromatic amine, comprising ~~the following steps~~:

(a) providing a polypeptide encoded by the nucleic acid of claim 1;

(b) providing an aromatic amine; and

(c) reacting the polypeptide of ~~step~~ (a) with the aromatic amine of ~~step~~ (b) under conditions that facilitate ~~the laccase activity of the polypeptide; thereby modifying~~

oxidizing the aromatic amine ~~a small molecule~~ by [[a]]the laccase enzymatic reaction.

Claims 152-166 (canceled)

Claim 167 (previously presented): The method of claim 106, wherein step (b) comprises glycosylating the polypeptide.

Claims 168-196 (canceled)

Claim 197 (previously presented): The isolated, synthetic or recombinant nucleic acid of claim 267, further comprising a sequence encoding a signal sequence.

Claims 198-258 (canceled)

Claim 259 (previously presented): The method of claim 106, wherein the host cell is a yeast cell.

Claim 260 (currently amended): The method of claim 259, wherein the host is selected from the group consisting of: a Schizosaccharomyces sp., a Saccharomyces sp., [[and]]or a Pichia sp.

Claim 261 (previously presented): The method of claim 260, wherein the host is Schizosaccharomyces pombe.

Claim 262 (Previously presented): The method of claim 260, wherein the host is Saccharomyces cerevisiae.

Claim 263 (Previously presented): The method of claim 260, wherein the host is Pichia pastoris.

Claim 264 (Previously presented): The method of claim 106, wherein the host cell is E. coli.

Claim 265 (Previously presented): The method of claim 106, wherein the host cell is Bacillus cereus.

Claim 266 (currently amended): The nucleic acid of claim [[6]] 1, wherein the nucleic acid ~~comprises a~~ sequence ~~encoding the~~ encodes a polypeptide sequence [[of]] comprising SEQ ID NO:24.

Claim 267-269 (canceled)

Claim 270 (previously presented): The method of claim 151, wherein the aromatic amine is 2,2'-azino-bis(3-ethylbenzthiazoline-6-sulfonic acid) (ABTS).

Claim 271 (previously presented): A method for oxidizing valencene, comprising the following steps:

(a) providing a polypeptide encoded by the nucleic acid of claim 1;

(b) providing valencene; and

(c) reacting the polypeptide of step (a) with the valencene under conditions that facilitate the laccase activity of the polypeptide; thereby oxidizing the valencene.

Claim 272 (canceled)